<u>REMARKS</u>

This application has been reviewed in light of the Office Action dated May 20, 2004.

Claims 24, 27, 29, 58, 59 and 62-67 are presented for examination, of which Claims 24, 27, 62,

63, 64, and 67 are in independent form. Claim 62 has been canceled without prejudice or

disclaimer of subject matter. Claims 24, 27, 63, 64 and 67 have been amended to define still

more clearly what Applicants regard as their invention. Favorable reconsideration is requested.

Claims 24, 27, 63, 64 and 67 have been rejected under 35 U.S.C. § 112, first paragraph

in that disclosure that the image processing performed by the external computer in the first

copying mode is different from the image processing performed by the control unit in the second

processing mode. The objected-to recitation has been deleted in Claims 24, 27, 63, 64 and 67.

Accordingly, it is believed that these claims fully meet the requirements of 35 U.S.C. § 112, first

paragraph.

Claims 27 and 67 have been rejected under 35 U.S.C. § 103(a) as unpatentable over

U.S. Patent 5,021,892 (Kita) in view of U.S. Patent 4,989,163 (Kawamata, et al.). Claim 29 has

been rejected under 35 U.S.C. § 103(a) as unpatentable over U.S. Patent 5,021,892 (Kita) in view

of U.S. Patent 4,989,163 (Kawamata, et al.) and further in view of U.S. Patent 5,218,458

(Kochis, et al.). With regard to the claims as currently amended, these rejections are respectfully

traversed.

Independent Claim 27 as currently amended is directed to an image processing method

for an image processing device capable of operating in plural modes including a read mode, a

print mode, a first copying mode and a second copying mode. In the read mode a read operation

performed in response to a read designation by a user, an image of a document is read and an

image signal is output by a scanner and transmitted by the scanner to an external computer via a

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first bidirectional general purpose interface. In the print mode for performing a print operation in response to a print designation by the user, an image signal is received from the external computer via the first directional general purpose interface and the image signal is output to a printer via a second bidirectional general purpose interface of the same standard as the first bidirectional general purpose interface. In the first copying mode of performing a first copying operation based on a second processed image signal in response to a copying designation by the user, the image of a document is read by a scanner which outputs an image signal. The outputted image signal is transmitted to the external computer via the first bidirectional general purpose interface. The external computer performs image processing on the transmitted image signal to provide a second processed image signal, the image processing by processing necessary for copying. The second processed image signal is received from the external computer via the first bidirectional general purpose interface and the second processed image signal is output to the printer via the second bidirectional general purpose interface. The copying operation is completed without requiring any additional designation by the user other than the copying designation. In the second copying mode that performs the second copying operation based on first processed image data, an image of a document is read and output by a scanner. Image processing on the image signal output by the scanner is performed to provide the first processed image signal, the image processing being necessary for copying. The first processed image signal is output to the printer via the second bidirectional general purpose interface.

Independent Claim 67 as currently amended is directed to an image processing device capable of operating in a first copying mode and a second copying mode. In the first copying mode of performing a first copying operation based on a second processed image signal in response to a copying designation by the user, the image of a document is read by a scanner

which outputs an image signal. The outputted image signal is transmitted to the external computer via the first bidirectional general purpose interface. The external computer performs image processing on the transmitted image signal to provide a second processed image signal, the image processing by processing necessary for copying. The second processed image signal is received from the external computer via the first bidirectional general purpose interface and the second processed image signal is output to the printer via the second bidirectional general purpose interface. The copying operation is completed without requiring any additional designation by the user other than the copying designation. In the second copying mode that performs the second copying operation based on first processed image data, an image of a document is read and output by a scanner. Image processing on the image signal output by the scanner is performed to provide the first processed image signal, the image processing being necessary for copying. The first processed image signal is output to the printer via the second bidirectional general purpose interface.

In Applicants' view, <u>Kita, et al.</u> discloses an image processing device for controlling data transfer includes an image scanner, an image printer, a facsimile control unit, bus lines for data transfer, a bidirectional parallel interface unit, and a main CPU in a housing. The device is connected to an external data processing device through the parallel interface unit. In addition to the functions which are obtained independent from the external data processing device, the image processing device realizes various kinds of functions by controlling the image scanner, the image printer facsimile control unit and the interface unit by the main CPU in response to commands from the data processing device. As a result, various kinds of image processing functions are carried out.

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In Applicants' opinion, <u>Kawamata, et al.</u> discloses a photo printer system that has a magnetic storage for storing a print data sent from a host computer, a bit map memory for storing a print dot data, and a printer engine for printing the contents of the bit map memory. The system includes a program which operates on the magnetic storage to serve as an external storage for the host computer and on the bit map memory to serve as a cache memory in response to a data read/write command issued by the host computer, and a CPU which controls the execution of the program. At least in a non-print process mode, the system forms a data path so that the host computer can access to the bit map memory and magnetic storage so as to have a bidirectional data read/write operation. In another mode, the system forms a data path so that image data picked up with an image scanner is saved directly in the bit map memory and the image data is sent to the host computer by request.

According to the invention of Claims 27 and 67 as currently amended, there are first and second copying modes. In the first copying mode, the image processing apparatus transmits a scanned image to an external computer, then receives the image that has undergone image processing by the external computer and transmits the received image to a printer. In the second copying mode, the image processing apparatus transmits a scanned image to a printer to print the scanned image without transmitting the scanned image to the external computer. The first copying mode is performed in response to a copying designation by a user and is completed without requiring any additional designation by the user other than the copying designation. Accordingly, the copying operation of the first copying mode that uses the external computer is completed without requiring a user to input additional designations other than the copying designation.

Kita, et al. may disclose a system having a multifunction image processing device 1 and a personal computer 8 that is connected to the multifunction image processing device. Control commands on a keyboard of the personal computer in Kita, et al. controls the multifunction image processing device. As indicated in Fig. 5 of Kita, et al., a code 45 received by the multifunction image processing device causes the multifunction image processing device to start scanning an image and to transmit the scanned image to the personal computer. A code 42 command entered into the keyboard causes the multifunction image processing device to execute printing based on an image received from the personal computer. A code 47 from the personal computer causes the multifunction image processing device to perform a copy by scanning an image and directly transmitting the scanned image to the printer without transmitting the image to the personal computer.

In a "copying" operation using the personal computer, Kita, et al. transmits the control command code 45 to the multifunction image processing device via the personal computer keyboard to transmit an image from the multifunction image processing device to the personal computer. An application program is executed in the personal computer performing image processing on the image transmitted from the multifunction image processing device. Upon transmittal of a control command code 42 from the personal computer keyboard to the multifunction image processing device, the multifunction image processing device operates to print the image received from the personal computer. As a result, the Kita, et al. arrangement requires that plural designations be performed to complete a copying operation using an external computer. In contrast, it is a feature of Claims 27 and 67 that the first copying mode in which an image processing apparatus transmits a scanned image to an external computer, then receives the image that has undergone image processing by the external computer and then transmits the

received image to a printer is performed in response to a copying designation by a user and is completed without requiring any additional designation by the user other than the copying designation.

Kawamata, et al. has been cited as disclosing a print system in which all of the interfaces are standardized. The Kawamata, et al. disclosure, however, fails in any manner to suggest the feature of Claims 27 and 67 of a first copying mode being performed in response to a copying designation by a user and being completed without requiring any additional designation by the user other than the copying designation. Accordingly, neither Kita, et al. nor Kawamata, et al. teaches or suggests the feature of Claims 27 and 67 that a copying mode in which a copy operation is performed responsive to and is completed without requiring any additional designation by a user other than a copy designation. It is therefore not seen that the addition of Kawamata, et al. standardized interfaces to Kita, et al. could possibly suggest the features of Claims 27 and 67. It is therefore believed that Claims 27 and 67 as currently amended are completely distinguished from any combination of Kita, et al. and Kawamata, et al. and are allowable.

Claims 24, 59 and 63-66 have been rejected under 35 U.S.C. § 103(a) as unpatentable over U.S. Patent 5,021,892 (Kita) in view of U.S. Patent 4,989,163 (Kawamata, et al.). Claim 58 has been rejected under 35 U.S.C. § 103(a) as unpatentable over U.S. Patent 5,021,892 (Kita, et al.) in view of U.S. Patent 4,989,163 (Kawamata, et al.) and further in view of U.S. Patent 5,900,947 (Kenmochi). With regard to the claims as currently amended, these rejections are respectfully traversed.

Independent Claim 24 as currently amended is directed to an imaging processing device having a scanner that reads an image of a document and outputs an image signal. A

control unit controls the image processing device and performs image processing on the image signal output from the scanner to provide a first processed image signal, the image processing being necessary for copying. A first bidirectional general purpose interface transmits the image signal output by the scanner under control of the control unit to an external computer which performs image processing on the transmitted image signal to provide a second processed image signal and receives the second image signal from the external computer. The image processing performed by the external computer is necessary processing for copying. A second bidirectional general purpose interface of the same standard as the first bidirectional general purpose interface outputs the first processed image signal and the second processed image signal to a printer. In the read mode for performing a read operation in response to a read designation by a user, the image signal from the scanner is transmitted to the external computer via the first bidirectional general purpose interface. In the print mode that performs a printing operation in response to a print designation by the user, the image signal from the external computer is transmitted to the printer via the first bidirectional general purpose interface and the second bidirectional general purpose interface. In the first copying mode that performs first copying operations based on the second processed image signal in response to a copying designation by the user, the image signal from the scanner is transmitted to the external computer where the image signal is processed into the second processed image signal via the control unit and the first bidirectional general purpose interface. Thereafter, the second processed image signal is transmitted to the printer via the first bidirectional genera purpose interface, the control unit and the second bidirectional general purpose interface. The copying operation is completed without requiring any additional designation by the user other than the copying designation. In the second copying mode that performs second copying operations based on the first processed image signal, the image signal

from the scanner is transmitted to the control unit where the image signal is processed into the first processed image signal. The first processed image signal is transmitted to the printer via the second bidirectional general purpose interface.

Independent Claim 63 as currently amended is directed to an image processing system having information processing apparatus. In the information processing apparatus, a read designation unit designates a start for reading of a document. A print designation unit designates a start for print data that the information processing apparatus transmits. A copying designation unit designates a start for copying. A processing unit processes an image signal to provide a second processed image signal. An image processing apparatus has a scanner to read a document image and output an image signal. A control unit controls the image processing and performs image processing on the image signal from the scanner to provide a first processed image signal. The image signal processing is processing necessary for copying. A first bidirectional general purpose interface transmits, under control of the control unit, the image signal output by the scanner to the information processing apparatus which performs image processing on the transmitted image signal to provide the second processed image signal and receives the second processed image signal from the information processing apparatus performed by the image processing apparatus. The image processing is processing necessary for copying. A second bidirectional general purpose interface of the same standard as the first bidirectional general purpose interface outputs the first processed image signal and the second processed image signal to a printer. A copy key designates a stare for copying.

The image processing in Claim 63 has plural modes including a read mode performed in response to a read designation by the information processing apparatus, a print mode performed in response to a print designation by the information processing apparatus, a first

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copying mode performed in response to a copying designation and a second copying mode

performed in response to a copying designation by the copy key. In the first copying mode that

performs a fist copying operation based on the second processed image signal in response to a

copying designation by the user, the image signal from the scanner is transmitted to the

information processing apparatus where the image signal is processed into the second processed

image signal via the control unit and the first bidirectional general purpose interface. Thereafter,

the second processed image signal is transmitted to the printer via the first bidirectional general

purpose interface, the control unit and the second bidirectional general purpose interface. The

copying is completed without requiring any additional designation by the user other than the

copying designation. In the second copying mode that performs a second copying operation

based on the first processed signal, the image signal from the scanner is transmitted to the control

unit where the image signal is processed into the first processed image signal and the first

processed image signal is transmitted to the printer via the second bidirectional general purpose

interface.

Independent Claim 64 as currently amended is directed to an image processing device

in which a scanner reads a document image and outputs an image signal. A control unit controls

the image processing device and performs image processing on the image signal output from the

scanner to provide a first processed image signal. The image processing is processing necessary

for copying. A first interface transmits the image signal output by the scanner to an external

computer which performs image processing on the transmitted image signal to provide a second

processed image signal and receives the second processed image signal from the external

computer. The image processing performed by the external computer is processing necessary for

copying. A second interface outputs the first processed image signal and the second processed image signal to a printer.

The image processing device of Claim 64 has a first copying mode and a second copying mode. In the first copying mode that performs a first copying operation based on the second processed image signal in response to a copying designation by the user, the image signal is transmitted to the external computer where the image signal is processing into the second processed image signal via the control unit and the first interface. Then the second processed image signal is transmitted to the printer via the first interface, the control unit and the second interface. The copying operation is completed without requiring any additional designation by the user other than the copying designation. In the second copying mode that performs a second copying operation based on the first processed image signal, the image signal is transmitted to the control unit where the image signal is processed into the first processed image signal and the first processed image signal is transmitted to the printer via the second interface.

It is a feature of Claims 24, 63 and 64 that a first copying mode in which an image processing apparatus transmits a scanned image to an external computer, then receives the image that has undergone image processing by the external computer and then transmits the received image to a printer is performed in response to a copying designation by a user and is completed without requiring any additional designation by the user other than the copying designation. As discussed with respect to Claims 27 and 67, Kita, et al. only discloses a copying mode using a personal computer that requires transmitting a control command code 45 to a multifunction image processing device via the personal computer keyboard to transmit an image from the multifunction image processing device to the personal computer, executing an application program in the personal computer that performs image processing on the image transmitted from

the multifunction image processing device and transmittal of a control command code 42 from the personal computer to the multifunction image processing device to cause the multifunction image processing device to operate to print the image received from the personal computer. As a result, the Kita, et al. arrangement requires plural designations by a user to complete performing a copying operation using an external computer.

As discussed with respect to Claims 27 and 67, Kawamata, et al. has only been cited as disclosing a print system in which all of the interfaces are standardized but fails in any manner to suggest the feature of a first copying mode being performed in response to a copying designation by a user and being completed without requiring any additional designation by the user other than the copying designation. Accordingly, neither Kita, et al. nor Kawamata, et al. teaches or suggests the features of Claims 24, 63 and 64 of a copying mode in which a copy operation is performed responsive to and is completed without requiring any additional designation by a user other than a copy designation. It is therefore believed that Claims 24, 63 and 64 as currently amended are completely distinguished from any combination of Kita, et al. and Kawamata, et al. and are allowable thereover.

Claims 24, 59 and 63-65 have been rejected under 35 U.S.C. § 103(a) as unpatentable over U.S. Patent 5,021,892 (Kita) in view of U.S. Patent 5,113,494 (Menendez). With regard to the claims as currently amended, this rejection is respectfully traversed.

Menendez, in Applicants' view, discloses a raster image processor (RIP) that contains a bus and a number of separate image processing components such as a scaler, a decompressor and various interface circuits. Each of these components is connected to the bus and is capable of undertaking a respective image processing task substantially in parallel with those undertaken by other of these image processing components. In addition, an arbiter is also connected to the

bus. The arbiter, typically a microcomputer system, receives a request, from any one of the image processing components (the source component), for service, from another one of the image processing components (the destination component). Then, depending upon the availability of the bus and the destination component, the arbiter defines a data path over the bus between the source and destination components, and thereafter initiates an information (typically data) transfer over the bus and between these components. Once this transfer is complete, the destination component is then able to undertake its respective image processing task substantially independent of the tasks undertaken by both the arbiter and the source component. At this point, both the arbiter and the source component are free to perform other image processing tasks while the destination component is performing its respective task. This pipe-lined operation substantially and advantageously increases the throughput of the RIP.

As discussed with respect to Claims 27 and 67, it is a feature of Claims 24, 63 and 64 that a first copying mode in which an image processing device transmits a scanned image to an external computer, then receives the image that has undergone image processing by the external computer and transmits the received image to a printer is performed in response to a copying designation by a user and is completed without requiring any additional designation by the user other than the copying designation. Accordingly, the copying operation of the first copying mode that uses the external computer is completed without requiring a user to input additional designations other than the copying designation.

As noted with respect to Claims 27 and 67, Kita, et al. only discloses a system consisting of a multifunction image processing device and a personal computer that is connected to the multifunction image processing device wherein the multifunction image processing device is controlled by control commands according to an input content from the key board. In Kita, et

al., one command code 45 from the personal computer causes transfer of an image signal from the multifunction image processor to a personal computer. Another separately entered control command code 42 cause the multifunction image processing device to execute printing based on the image received from the personal computer. Accordingly, Kita, et al. fails in any manner to suggest the feature of a copying mode in which a copy operation is performed responsive to and is completed without requiring any additional designation by a user other than a copy designation.

Menendez, et al. has been cited as disclosing a print system comprising various nodes connected to a bus wherein all of the nodes are identical. Both Kita, et al. and Menendez, et al., however, fail to suggest the feature a copying mode in which a copy operation is performed responsive to and is completed without requiring any additional designation by a user other than a copy designation. It is therefore not seen that the addition of Menendez, et al.'s identical nodes connected to a bus devoid of performing a copying operation using only a copy designation to Kita, et al. could possibly suggest the features of Claims 24, 63 and 64. Accordingly, it is believed that Claims 24, 63 and 64 as currently amended are completely distinguished from any combination of Kita, et al. and Menendez, et al. and are allowable.
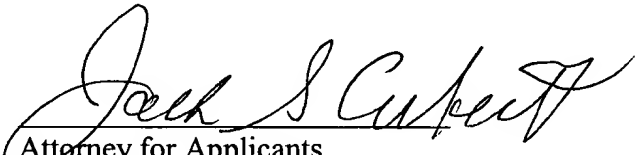
A review of the other art of record has failed to reveal anything which, in Applicants' opinion, would remedy the deficiencies of the art discussed above, as references against the independent claims herein. Those claims are therefore believed patentable over the art of record. Applicants submit that the cancellation of independent Claim 62 and the amendments to independent Claims 24, 27, 63, 64 and 67 clarify Applicants' invention and serve to reduce any issues for appeal.

The other claims in this application are each dependent from one or another of the independent claims discussed above and are therefore believed patentable for the same reasons. Since each dependent claim is also deemed to define an additional aspect of the invention, however, the individual reconsideration of the patentability of each on its own merits is respectfully requested.

In view of the foregoing amendments and remarks, Applicants respectfully request favorable consideration and reconsideration and early passage to issue of the present application. The Examiner is respectfully requested to enter this Amendment After Final Action under 37 C.F.R. § 1.116.

Applicants' attorney, Daniel S. Glueck, may be reached in our Washington, D.C. office by telephone at (202) 530-1010 All correspondence should continue to be directed to our address given below.

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